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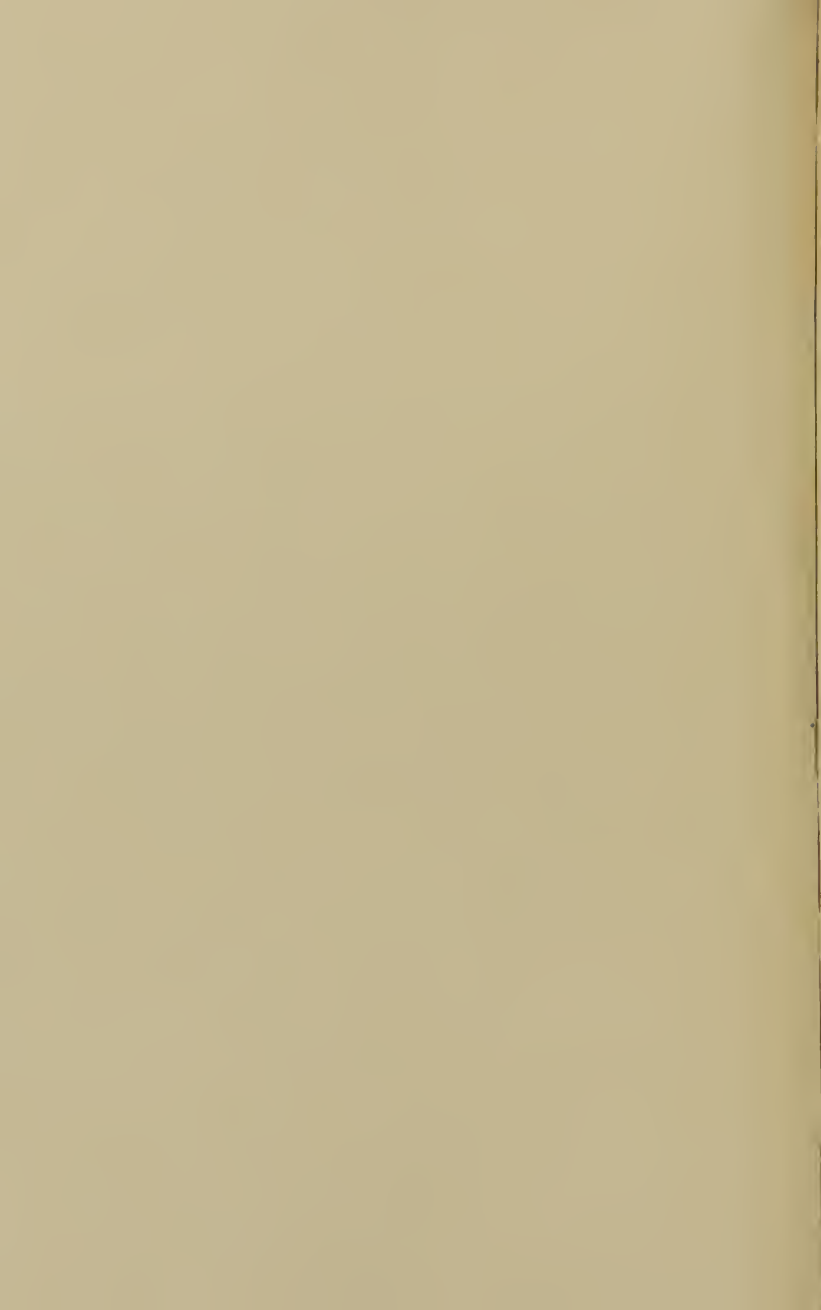


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WASHINGTON, D.C.





AN  
INAUGURAL DISSERTATION,  
FOR  
THE DEGREE OF  
DOCTOR OF MEDICINE,  
SUBMITTED  
*TO THE EXAMINATION OF*  
JOHN MCDOWELL, LL.D. PROVOST,  
THE  
TRUSTEES AND MEDICAL PROFESSORS  
OF THE  
*UNIVERSITY OF PENNSYLVANIA,*  
ON  
THE 19th DAY OF APRIL, 1809

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AN ESSAY  
ON THE  
PARTIAL  
AND  
CONCEALED INVERSION  
OF THE  
UTERUS.

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BY CHARLES DRAYTON, JUN

Of Charleston, South Carolina.

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PHILADELPHIA.

PRINTED FOR THE AUTHOR.

1809.



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TO

WILLIAM P. DEWEES, M.D.

*Lecturer on Midwifery,*

IN

PHILADELPHIA,

THIS ESSAY

IS

RESPECTFULLY DEDICATED,

AS

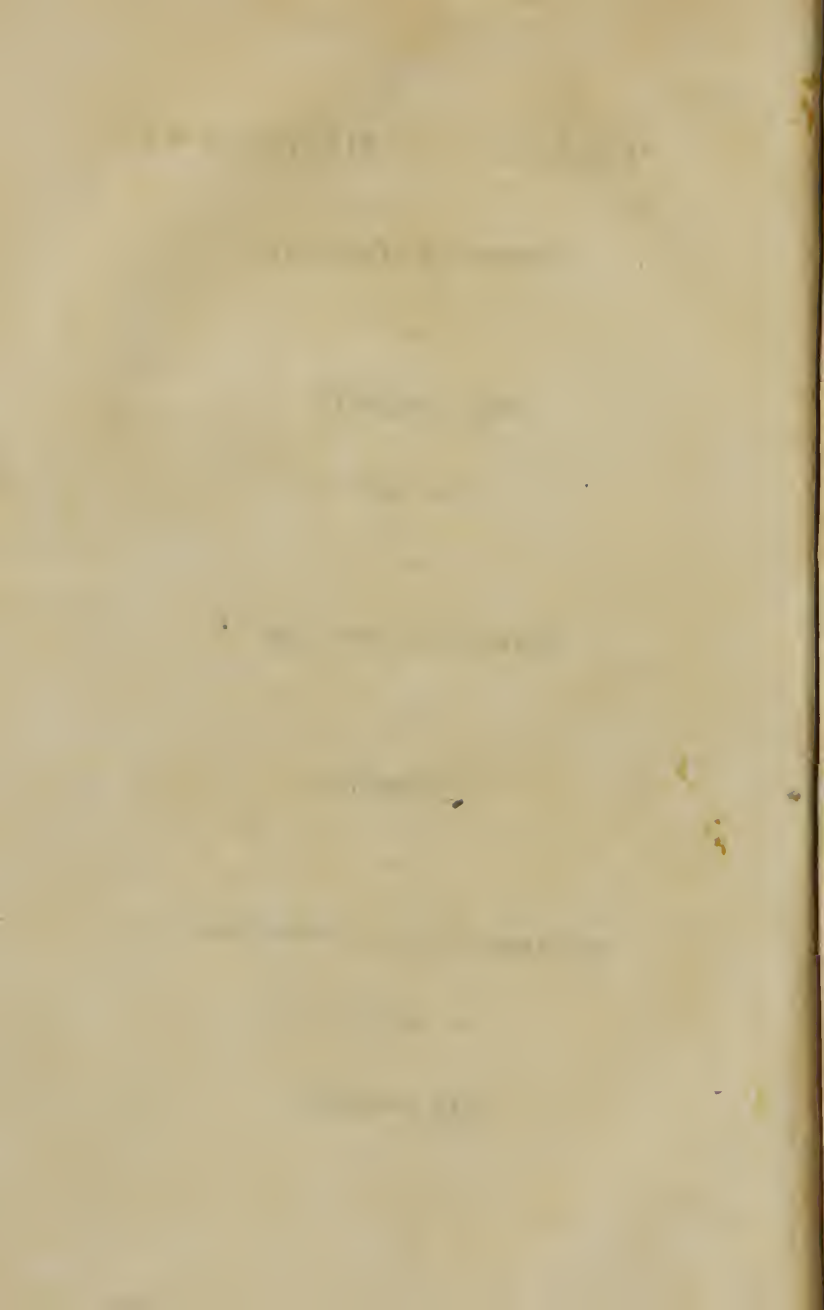
A TRIBUTE

OF

GRATITUDE, ESTEEM, AND FRIENDSHIP,

BY HIS PUPIL,

THE AUTHOR.



## INTRODUCTION.

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HOWEVER numerous the *diseases* to which the female sex is subject in common with men, still is it liable to many more of very different, and perhaps more dangerous natures, from the severe duties imposed on it by the act of Child-bearing.—Among the variety already on record, there is no mention made (as far as my knowledge goes) of the *partial and concealed inversion* of the *uterus*.\* I shall commence, though with diffidence, by treating as briefly as possible, of a *disease* entirely new as respects our acquaintance with it, though without doubt of ancient existence; for if a misfortune so terrible as a *partial inversion* of the *uterus* befalls *parturient women* in these days, there is every reason to think that the same must have occurred for

\* Dr. Spence, in his *System of Midwifery*, has recorded a case of the complete inversion.—Vol. II, p. 433, case xi.

ages past:—and numerous indeed must have been the unfortunate sufferers who have fallen victims to this alarming *evil*, from a want of acquaintance with it;—as the three or four cases which have occurred within these eighteen months to my late worthy preceptor Dr. Dewees, the first I believe who has noticed this *disease*,\* and to whom the science of midwifery can never be too much indebted for its discovery, it is evident that this *evil*, however terrible, is not *irremediable*.

In order to render my subject as explicit and perspicuous as possible, I have thought proper to divide it into three parts:—in the first, I shall consider in a concise manner, the *anatomy* of the *uterus*, its *actions*, the *changes* which it undergoes from *gestation* and *delivery*, and the *attachment* of the *placenta*;—in the second, of the *inversion*, its *causes*, *symptoms*, and *mode of cure*;—and in the third I shall relate three or four cases† with which I am kindly favoured by my much esteemed friend Dr. Dewees.

\* In a paper lately published in Dr. Coxe's *Medical Museum*, Vol. VI, No. 1, p. 11.

† Published in the paper before mentioned.

## PART I.

- I. Of the Anatomy of the Uterus.
  - II. Of the Changes produced in the Uterus  
by Gestation.
  - III. Of the Actions of the Uterus.
  - IV. Of the Changes produced in the Uterus  
from Delivery.
  - V. Of the Attachment of the Placenta.
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## PART II.

- I. Of the Partial and Concealed Inversion  
of the Uterus.
  - II. Of the Causes—
    - a.* Remote,
    - b.* Proximate.
  - III. Of the Symptoms.
  - IV. Of the Mode of Cure.
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## PART III.

### CASES.

1.—2.—3.—4.



## PART I.

### I. *Of the Anatomy of the Uterus.*

1. **DEEMING** it unnecessary to enter minutely into a description of this important organ of the female system, we shall only take a cursory view of it, in order that the subject with which it is so nearly connected may be more easily comprehended.

2. The *Uterus* is that hollow viscus in which the important object of *generation* is most commonly performed—it is situated in the cavity of the *pelvis*, between the *bladder* and *rectum*, to both of which it is connected, and communicates with the *vagina* by an orifice termed *os tincæ*.

3. It is usually distinguished into *fundus*, *body*, and *neck*:—By *fundus*, is to be understood all that portion which is above the insertion of the fallopian tubes;—By *body*, that portion which is immediately below the insertion of the fallopian tubes, and extending from thence to the commencement of the narrowing, which is termed

the *neck*, in which is comprehended that part inferior to the *body*, and terminated by the *ostincæ*.

4. This viscus is supplied with numerous blood vessels, which anastomose so very frequently, that, when injected in the impregnated state, they form one general and extensive plexus.

5. In the different states of the womb however, these vessels exhibit different appearances, as to size and form;—in the *unimpregnated state*, they are small and much convoluted, the reverse of what they are in the *impregnated state*.—The *arteries* come from the hypogastrics and spermatics, and terminate, some in veins which accompany them; others in sinuses, which are in some instances, of sufficient size to admit the extremity of a finger. The *veins* are much larger than the *arteries*; anastomose much more freely than they do in other parts of the body, and are destitute of *valves*.

6. The structure of the *uterus* we do not hesitate to say is *muscular*; it would appear so from

actual dissection in the gravid state; and is proved by the phænomena of labour.—Although it be admitted by most anatomists that it possesses muscular fibres, still they have not determined as to the arrangement of their strata; as each has thought he has discovered some new course.

7. Thus Vesalius describes three strata of fibres, the one external and transverse, the other internal and perpendicular, and the third, intermediate and oblique;\* while on the other hand Malphigi asserts that they form a net-work.†—Ruysh makes them appear in concentric places at the *fundus*, forming an orbicular muscle;‡ while Dr. Hunter delineates them as transverse in the body, and at the fundus as forming concentric circles round each orifice of the fallopian tubes.||

8. With regard to the arrangement of the strata of fibres, it is of no importance as it re-

\* Burns, on the *Gravid Uterus*, p. 41.

† Ibid, p. 41.

‡ Ibid.

|| Vide Hunter's plates, on the *Gravid Uterus*, plate xiv, fig. 1.

spects the present purpose; to know that they exist is sufficient;—this diversity of opinion serves to show, however, that there are muscular fibres, but that they are not regular in their distribution. Of the manner in which this important viscus takes on muscular action we will not at present inquire. We will now remark on some of the *changes* which take place during *gestation*.

## II. *Of the Changes produced in the Uterus by Gestation.*

9. There are few subjects less perfectly understood than the mode by which nature produces the various changes which take place in this viscus from the period of impregnation to that of parturition; the intent of which seems to be the perfection, security, and finally the expulsion of the *ovum*.

10. Some of the most material of these changes are,

1. A general increase of size in the uterus; this however is not very evident at the commencement of pregnancy.

2. This augmentation, though universal, does not take place equally in all parts of the *uterus*, during every period of gestation; the fibres of the *fundus* and *body* appear to be more yielding than those of the *neck*, at least for the first six months, and seem to furnish the whole of the room necessary for the *ovum*.
3. From this period the fibres of the *neck* begin to unfold, and continue to do so in common with those of the *fundus* and *body*; but in the last stage of pregnancy they alone seem to contribute to the formation of the cavity, and are now so much extended that the *neck* is completely obliterated.
4. The *os tinæ* is at this time also rendered extremely thin, and is only to be distinguished by its round protuberant edges.
5. The blood-vessels as has been already observed are considerably increased in size.  
(See par. 5.)

11. The changes just mentioned affect the *parietes* of the *uterus* alone; there are others of great importance which take place within its *cavity*, such as

1. The descent of the *ovum* with its membranes, the *amnion* and *chorion*.
2. The formation of the *decidua vera* and the *decidua reflexa*, &c.
3. The attachment of the *placenta*, &c.

12. We might add other alterations which happen to the *uterus* besides those already enumerated, but as they are not immediately connected with my subject, I shall not enter into a detail of them; especially as they are distinctly marked and pretty faithfully recorded in most books of midwifery.

13. The manner in which these changes are effected, still remain one of the great desiderata of physiology;—with respect to the increase of size in the substance of the *uterus* itself, it is easily conceived; and it is admitted on all sides,

that the enlarged state of the blood-vessels, the elongation of fibre, &c. may and do produce it:—But to account for the augmentation of its cavity has long been a subject of dispute; whether it be effected by an *action* inherent in the *uterus* at this period; or, *mechanically*, by the pressure of the increasing *ovum*.

14. Of these opinions the former is the most prevalent; but to assert that the *ovum* has no influence in producing this effect, seems to be an assertion founded in error; to enter minutely however into the discussion of this point, is not compatible with the object of my present essay; but I cannot dismiss this very interesting subject, without saying a few words in favour of the active power of the *ovum*.\*

1. It is asserted by Mr. Burns,† that the same power which regulates the increase of other parts under certain circumstances, prevails during gestation in the *uterus*—if this be ad-

\* This last opinion is sustained by Dr. Dewees, in his lecture on the gravid uterus.

† See Burns, on the gravid uterus, p. 23.

mitted it can only apply to the increase of volume in the *parietes* of the uterus, and can not be made to bear on the augmentation of the *cavity* of this viscus. For were this admitted in its fullest latitude we should find that it would tend to close the cavity, and this would certainly take place, were this tendency not counteracted by the inclosed *ovum*.

2. It is also asserted that the *uterus* augments when the *fætus* is inclosed in the *ovarium fallopian tube*, or has dropped into the *cavity of the abdomen*:\*—that the *uterus* increases we admit; but it is merely its *walls*, and not its *cavity*—the changes which we have already mentioned as taking place in the *uterus* as soon as conception has commenced, will well account for this augmentation, (see par. 13) for it will not be denied that these take place, let the *fætus* be placed wherever it may.—Besides, those who mention cases

\* This fact is considered by Mr. Burns as a decisive proof against the agency of the ovum. See Burns, on the gravid uterus, p. 23, n. \*.

of *extra uterine conceptions*, do not assert that the *uterus* is as large as when it *incloses the ovum*—they merely say that it is increased in size. See Hamilton, &c.

3. But to do away all argument against the power of the *ovum*, we need but attend to the following fact; if by accident or design the *membranes* of the *ovum* be ruptured, and the *liquor amnii* be suffered to escape, the *uterus* immediately collapses and diminishes in size; which would not be the case had it not previously offered some power to the *parietes* of the *uterus*.

15. Having now reviewed the principal changes which occur in this important organ during the term of *gestation*; we shall proceed to consider

### III. *The Actions of the Uterus.*

16. In treating of the actions of the different parts of this viscus, it has been customary to consider them as similar and dependant on each other; but there can be very little doubt but that they are dissimilar and independant; the office

of the *body* and *fundus* appears to be diametrically opposite to that of the *neck*, or *mouth* of the *uterus* during labour, an opinion I believe first surmised by Dr. Dewees, and ably supported by him in his inaugural dissertation.\*

17. These actions are commonly divided into two, viz. *tonic* and *spasmodic*; both of which depend as we believe on muscular action; Dr. Dewees enumerates a greater number of actions or contractions but as they are not immediately connected with this subject, I shall pass them over and only treat of the two before mentioned, for which purpose I shall introduce the following definitions given by him, of

‘ 1. Tonic contraction:—by this we understand  
 ‘ that uniform action which the uterus exerts  
 ‘ to reduce itself to its original size; this ap-  
 ‘ pears to be the effect of all the fibres fold-  
 ‘ ing themselves up after the distracting  
 ‘ cause is removed.

‘ 2. Spasmodic contraction:—or that contraction

\* See his inaugural dissertation, p. 13, and seq.

‘of the uterus which is for the most part accompanied with pain. It must however be remembered that pain does not necessarily belong to this species of contraction, since some women are delivered without it. We should therefore, agreeably to this fact, rather call this species the *alternate contraction* of the uterus; as it has a greater or less interval between each contraction: when this action is best performed, it is, we presume, chiefly by the longitudinal fibres.’\*

18. On these two contractions then, depend, what are termed the tonic and spasmodic actions of the uterus; but we observed that the latter is alternate; now, as the uterus has no antagonist muscle it might here become necessary to inquire in what manner this alternate action is performed, but as it is not immediately concerned in my present investigation I shall pass it over.†

\* Inaugural Essay, p. 27.

† Dr. Dewees accounts for this phenomenon in the following manner, by observing

1. That the uterus being regarded as a muscle, must possess

19. From what has been said of the actions of the uterus there can be no doubt of its muscularity; but as a farther proof of this we may urge the spontaneous delivery of the fœtus after the death of the mother;\* surely this could not be effected by *elasticity*, especially if the actions of every part be dependant and similar, for the *neck* would also contract by its *elasitic* power, and so counteract that of the *fundus* and *body*; but we have before observed that the office of the *neck* is the reverse of that of the *fundus* or *body* during delivery. (See par. 16.)

the properties common to all muscles; now all muscles have three states, viz. relaxation or rest, elongation, and contraction.

2. Before they can contract they must be elongated, this state is produced by the changes which the uterus undergoes from impregnation; and the fibres being put on the stretch to a certain degree, become stimulated to contraction, after which relaxation or rest ensues.

3. During contraction a considerable quantity of blood is driven into the maternal system from the vessels and sinuses of the uterus, which blood is again allowed to return into them so soon as relaxation takes place, by which means elongation is again produced; contraction succeeds, and then rest, and so on until the intended purpose is effected.†

\* See Bandelocque, Vol. I, p. 146, par. 229.

† MS. lecture on the gravid uterus—also his inaugural essay, p. 28

20. We have thought proper thus to dwell on the muscularity of this viscus, that what we shall presently advance on the inversion may, both with regard to its mechanism and mode of cure, be better understood. No one will hesitate to admit that the contractility of muscular fibre may be diminished, suspended or destroyed, and that it may again regain this power, but we know of no such states to any part simply elastic.

21. Having treated thus much of the action of the uterus, it is now necessary we should advert to a very different state to which it is frequently liable, and without the presence of which it is impossible for the disease in question to happen; this state is expressed by the term *atony*, by which is to be understood an incapacity to act for an unlimited time; the cause of which is *exhaustion*; this may arise from,

1. A bad constitution of the woman.
2. Hæmorrhagy; either preceding or succeeding delivery.
3. Long continued efforts to effect delivery.
4. From too sudden delivery.

5. Extreme distension of the uterus, which may proceed from an excess of the liquor amnii, a compound pregnancy, or an unusual size of the fœtus.\*
6. Passions of the mind.
7. External violence, &c.

22. It may be either general or partial; it may affect every part of this viscus at the same time, or any part separately. ‘ Sometimes it takes place ‘ in the *fundus* only, while the *neck* enjoys its full ‘ tone; at other times the *neck* alone is attacked by ‘ it, while the other parts contract and close as ‘ usual. It may be in a greater or less degree; and ‘ manifest itself at the instant of delivery, or some ‘ hours, and even days, afterwards; it may go off ‘ and re-appear a number of times, like a syncope.’

23. Its remedies are stimuli of various kinds, such as the irritation of the fingers against the internal surface of the uterus; pouring a stream of cold water from some height on the abdomen, &c.

\* Bandelocque, Vol. I, par. 232.

† Ibid, Vol. I, par. 231.

#### IV. *Of the Changes produced in the Uterus from Delivery.*

24. It must be evident that the changes from delivery are the reverse of those produced by gestation;—we shall barely remark that the uterus after the expulsion of its contents, is left in an empty and collapsed state; that its blood-vessels, from having poured out a quantity of blood, become again lessened in their diameters; and convoluted; and finally, that the muscular fibres in consequence of the enormous depletion, become less spongy and paler: in short, after a few weeks, the uterus returns nearly to its original state.

25. These changes are sometimes however more sudden, and the uterus in some instances is restored in a few days, and almost always (fortunately for the woman) evinces a disposition to contract the instant its distending causes are removed.—This disposition to contract immediately, or very soon after delivery, is our sheet anchor in cases of inversion; and it is to produce this ability where it has been lost, that all our efforts should tend.—The uterus oftentimes

shews great whimsicality in this respect—sometimes the *fundus* alone will contract; other times the *body* alone, and converts this viscus into a shape similar to an hour glass;\* and now and then the *neck* alone will pucker itself up, and then for the most part we have a concealed hæmorrhagy.

### V. Of the Attachment of the Placenta.

26. This mass is never confined in its attachment to any particular portion of the internal surface of the uterus, but may affix itself indifferently to the *fundus*, *body*, or *neck*: we might multiply authorities to prove the uncertainty of the placenta's location, but shall mention Bandelocque alone, who appears to have paid much attention to this subject, but with a different view—the *fundus* is therefore not more frequently (if so frequently) the seat of this mass; and this may be one reason why the disease of which we are treating is not of more frequent occurrence.—It has been observed, that *where* the *placenta* is attached, the *uterus* is thicker than any other part.

\* See Bandelocque.

and thus when placed on the *fundus* augments its weight.

27. We have no guide whatever to designate where the *placenta* is attached before the expulsion of the child, (unless indeed it happens to be at the *neck*) but fortunately after this is effected we may be able to ascertain it pretty accurately by tracing the *funis* with the finger—the degree of adhesion in general is not very great, as the *placenta* is only attached to the uterus by a fine cellular membrane; which does not require much force to separate it, should it be necessary to do so.

28. It may be well to observe here, that for an inversion to take place, the *attachment* of the *placenta* must be at the *fundus*, if its delivery be the *exciting* cause; and therefore it would be most prudent to ascertain this point in the manner just mentioned, whenever we meet with more than ordinary resistance in attempting it.

29. We have said that the *placenta*, when it contributes to the prolapsus of the *fundus*, must be placed on this part, and the caution on the

subject of its delivery would seem to imply a belief that it is always or most frequently placed there. This we have endeavoured to prove is not the case, but as we cannot always sufficiently promptly determine this point, we should ever be careful in making any exertion on the cord, until the uterus is sufficiently contracted to prevent any mischief from this source. Indeed if the delivery of the placenta was always methodically pursued, as directed by Baudilocque, &c. we should never run any risk of inverting the uterus when this body is placed on any other portion of the uterus than the fundus. For we are directed to act on the placenta in such a manner as will tend to raise it perpendicularly from its plane, consequently when fixed on the body, the portion to which it is attached will be carried towards its opposite side, and at right angles to the axis of the uterus and pelvis.

30. The delivery of the placenta when not attached to the fundus may however be indirectly the cause of a prolapsus; let us suppose it fixed on a portion of the body, and this to be in a state of atony—while the placenta preserves its union with the uterus, its bulk will

offer a support to the fundus if inclined to pro-lapse, as it will occupy a considerable part of the void; but the instant this is removed, (the same disposition continuing) the fundus will lose its support, and will now fall down, without the power which separated the placenta at all contributing to this accident.

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## PART II.

### I. *Of the Partial Inversion of the Uterus.*

31. Having in the preceding pages noticed the various states to which the uterus is liable, it will be easily seen what must occur before it can be inverted—namely, that an *atony* must exist either in the *whole* of it, or at least in the *body* and *neck*.

32. By *partial inversion* is to be understood that condition in the *uterus* in which the *fundus* is turned down inside out as far as the *neck*, or has passed through the *os internum*—This disease can take place, agreeably to the opinion of Dr. Dewees, only at or very near the full period.

of gestation; as, prior to this, the *uterus* is not sufficiently distended to be subject to such an accident.

## II. *Of the Causes.*

33. *a.* Remote—The remote cause is, whatever may prevent the contraction of the *body* and *neck* of the uterus, thus producing a partial atony or want of contractile power in these portions; the causes of which we have before enumerated when treating of atony. (See par. 27.)

*b.* Proximate—The proximate is the falling of the *fundus* through the *body*; this may be more or less extensive. 1. The fundus may not arrive completely to the *neck*; 2. It may be at the *neck*; 3. It may pass more or less through the *neck*.—It may be occasioned by whatever is capable of detruding the *fundus*, while the remote cause exists, and may be

1. The *contraction* of the *fundus* alone, while the *body* and *neck* are in a state of *atony*.
2. The *attachment* of the *placenta* at the *fundus*; for when every part of the uterus is in a

state of *atony*, it may be effected by the weight of this mass; or an attempt to deliver it while still adhering.

3. Or perhaps the mere weight of the fundus itself in cases of complete atony, especially if the placenta be attached to it; its bulk, as we have before observed, being augmented in consequence of this circumstance.

### III. *Of the Symptoms.*

34. When we find the following circumstances to exist, we may suspect, with pretty great certainty, that an inversion of the uterus has happened.

1. When we find the placenta very bulky and firm at the *os externum* soon after the exit of the child, and giving more than ordinary resistance to attempts made to deliver it by an exertion at the *funis*.
2. When as much force is applied as the cord ought to bear; and when the placenta is as

low in the vagina as above stated, and we do not perceive it to advance.

3. If the patient should complain of much pain from this effort; and more especially when any attempt is made to aid this exertion at the cord, by hooking the placenta with the finger, and we still find it to offer uncommon resistance.
4. If the patient has some hæmorrhage, becomes faint and extremely pale, more especially when this paleness cannot be accounted for, from the quantity of the discharge. (See case 4.)
5. When the patient complains of much pain without any apparent cause; has some hæmorrhage; is extremely pale; has frequent cold sweats with severe vomiting; and a frequent and scarcely perceptible pulse.

#### IV. *Of the Mode of Cure.*

35. When any of the abovementioned symptoms occur, (should it be before the delivery of the placenta, as in symptoms 1, 2, 3,) we ought

always to desist from any farther attempts to deliver the placenta; until we have carefully ascertained by examination whether the fundus be detruded with this mass or not.

36. For this purpose we should, as directed by Dr. Dewees, either

1. *Pierce* the *placenta* with the fore finger of the left hand, and tighten the cord with the right; or
2. *Search* for an *edge* of the *placenta*, and trace this to the place of adhesion:—and if we find there a round. solid, and rough surface; we may infer with certainty that the difficulty to the delivery of the placenta originates from a prolapsus of the *inverted fundus*.

37. Having in this manner ascertained the nature of the difficulties to be surmounted; the left hand is to be introduced if the patient be placed on her right side, and *vice versa* if on her left side, or either if on her back; and the *placenta* should be carefully separated by insinuating the fingers between *it* and the *uterus*; having effect-

ed its separation it may be readily withdrawn; and the indication then will be simply to *reduce* the *fundus*. This indication is to be fulfilled by *placing* the back of the *fingers* against the *tumour* and pushing it in the direction of the axis of the uterus until the fundus is restored to its natural situation.\*

38. But if the fundus be protruded too far to attempt restoration, the indication then will be, to take off the stricture which may be occasioned by the mouth of the uterus through which it has passed, contracting too forcibly on the body†—this may be pretty easily effected by firmly *grasping* the *tumour*, and drawing it forcibly towards the *os externum*, as the prolapsed part passes from a greater to a lesser bulk as it approximates the mouth.

39. But it may happen that the *mouth* of the uterus may remain flaccid in common with the other parts, and the *body* may thus escape from

\* See case IV.

† We have before observed, par. 22, that there may be a partial atony; the mouth may contract on the body which may be perfectly placid, and this really prevailed in case II.

constriction; in this case the symptoms would most probably be more mild than when the mouth has firmly contracted; there would be less pain; less disposition to syncope; &c.—in this state of things, we might reasonably hope to restore the fundus however complete the inversion; it should therefore be attempted in the same manner as when the inversion was left extensive, and as directed in par. 38.

40. Sometimes from an *atony* prevailing in the whole viscus it may be impossible for the *body* to retain the *fundus* in its proper place, being too flaccid; we should then endeavour to restore the tone of the uterus, or excite its action, by gently irritating with the fingers its internal surface until it contracts sufficiently; and then the hand may be withdrawn.

42. These alarming cases are generally attended with hæmorrhagy for checking which, free use should be made of the acetate of lead, streams of cold water poured on the *abdomen*, &c. as in uterine hæmorrhages generally.—But it is the opinion of Dr. Dewees that it may be checked more readily by the presence of the hand within

the uterus, producing irritation, and causing the bleeding vessels to contract; and it may also have a powerful and pretty sudden effect by offering an extensive foundation for *coagula*.\*

42. As this disease is at present but imperfectly known, as the opportunities for its investigation have been but few since its discovery,

\* The following case, furnished me by Dr. Dewees, tends to corroborate this idea.

Mrs. D—— was delivered, after a very tedious labour, of a living child:—considerable hæmorrhage ensued, and there was no disposition in the uterus to contract—the abdomen was gently stimulated; ice and brandy were applied to it, but the discharge continued. Dr. Dewees thought proper to attempt the immediate delivery of the placenta, for which purpose he introduced his hand and found a considerable portion of the placenta identified with the uterus; a large portion of the latter appeared completely scirrhus: the placenta was carefully pinched away, but there was no abatement of the flooding. The patient became very faint, and the doctor entertained serious apprehensions of the event. It was night—he had no medicines at hand but those already mentioned; but it occurred to him as the only resource to plug up the vagina with his arm, and allow his hand to remain in the uterus, that he might gently stimulate it—a coagulation was soon formed all round his hand and arm; and after keeping it in this situation for some time (nearly an hour), the uterus began to contract—the coagulum was thrown off, but no fresh hæmorrhage took place. The patient had a speedy recovery.

we deem it not hazarding much to offer a few conjectures on this subject. We have taken some pains to prove the muscularity of the uterus, and the independency of its several parts. We have cited the authority of Baudelocque and others to prove that one part may enjoy its full powers at the moment another may be deprived of them. This being admitted, may not cases occur where this disease may be completely concealed, when attempted to be ascertained by the simple touch? \* For instance, suppose the *neck* to enjoy its contractile power while the *fundus* and *body* are in a state of *atony*; and that causes, capable of detruding the fundus, to have acted while in this condition; what would follow? the *fundus* would be inverted as far as the *neck*, while a contraction of this part would prevent a further inversion and at the same time conceal the nature of the accident. Under these circumstances no doubt a great number of untoward symptoms would arise; pain, a constant nismus in the uterus, hæmorrhagy more or less extensive, faintings, or even convulsions might

\* By simple touch we mean the mere examination of the os  
*tinct* itself

ensue; these would more especially happen should the body recover its power and compress the fundus. These symptoms might not readily be accounted for as the mouth of the uterus had contracted, and the examination of it would seem to preclude the idea of an existing inversion. Time would necessarily be lost in trying to abate the most urgent symptoms by the usual means, while the true cause of the disease is not for an instant held in view. How ought we to proceed under these circumstances? If opiates &c. do not avail, I should recommend (agreeably to the advice of Dr. Dewees) the introduction of the hand into the vagina, and pass a finger completely through the os tinæ. We should then without doubt find the fundus, were it prolapsed, presenting itself to the finger.—Having ascertained the nature of the disease, how should we then proceed, as the mouth of the uterus is now pretty firmly shut? I believe we should attempt its dilatation by the successive introduction of the fingers, and eventually the hand; if we succeed in passing the hand we shall have I trust no difficulty in restoring the fundus.

44. The same disposition or capacity for contraction does not long exist together in the neck when any thing unusual is going on in the body of the *uterus*—thus we find the mouth of the uterus to open many hours, sometimes days, after the delivery of the child, to give passage to coagula formed within its cavity. This would seem to prove that it may without much hazard be forced at a pretty remote period from delivery. But should we not be able to succeed in this manner, are we to abandon the case as hopeless? I think not. It would seem to be a case that might sometimes cure itself, and perhaps always be relieved by art.—As more or less flooding, as we have observed already, must attend this case, let us suppose that a coagulum should forcibly block up the *os tincæ*; this clot would augment gradually, and continue so to do until some circumstances should stop the discharge, or until the uterus can hold no more; by this gradual filling of the cavity of the womb it must, necessarily we conceive, push up the prolapsed fundus and thus cure this terrible disease.

45. However, should this disease not be spontaneously cured; should the *os tincæ* refuse ad-

mission to the hand; is there no alternative left? under such circumstances the *fundus* I believe might be restored by passing any substance through the *os tincæ* that may press against the prolapsed part. I would proceed in the following manner:—First introduce the left hand completely into the vagina, and search for the mouth of the uterus with the fore finger, and then introduce along it, and through the *os internum* a piece of cedar stick cut smooth and round, and about half an inch in thickness, and flat at the introduced extremity; but taking care to have the edges shaped so as not to wound. This may be covered with fine linen and well lubricated. The extremity of this instrument would meet with the fundus, against which it should be firmly but cautiously pushed in the direction of the axis of the uterus. We should very soon know whether we were succeeding or not in this attempt by the progress of the instrument through the uterus. After we were assured of our success by externally feeling the uterus through the teguments of the abdomen while the instrument remained in, we should gently withdraw it. Should hæmorrhagy follow it should be treated as usual.

## PART III.

## CASES.

43. Having thus far treated of this terrible disease, I shall make no apology for the introduction of the four following cases, as related by Dr. Dewees, with his observations on them;—All of these occurred in his own practice; two of which I witnessed.\*

## CASE I.

“On the 2d of July, 1807, at 10 o'clock A. M. I was called to the wife of Samuel N—— in labour with her first child. Her pains were weak and irregular but pretty frequent; presentation perfectly natural;—As every thing appeared promising, I left her to the care of her midwife. At 4 o'clock P. M. she was suddenly delivered, considerable hæmorrhage with faintings followed; I was again sent for, but did not see her until six o'clock as she lived at a distance from the city. I found her without pulse, cold, and

\* Cases I & II.

covered with perspiration; with laborious and hurried breathing; the placenta not delivered, and the hæmorrhage continuing, I ordered her such remedies as appeared most pressingly indicated, and immediately examined her per vaginam. I found the placenta just within reach of the finger, and attempted to withdraw it, but it gave great resistance and extreme pain. I now introduced my hand and found a tumour resembling in shape and size the indentation at the bottom of the common black bottle, over which the placenta was spread. This case was perfectly new to me; although I strongly suspected the nature of the disease. I searched for the detached portion of the placenta from whence the flooding proceeded, and carefully detached it from the tumour; I then endeavoured to push up this body but quickly desisted, from the extreme pain it occasioned, and the uncertainty that it was the proper mode of relief. My patient died in half an hour.

I obtained leave to inspect the body, and Dr. Rush very kindly accompanied me. It proved as I had previously suspected, to be a partial inversion of the uterus I desected out the ute-

rus, which now was so flaccid as to be turned inside out with as much facility as a soaked bladder. The fundus dipped into the body of the uterus about three inches.

## REMARKS.

The extreme situation in which I found this patient renders it very doubtful, whether the reduction of the uterus would have been attended with any advantage, but had I had the knowledge of the disease that I now have I should certainly have attempted it. It may appear to some who speculate on these subjects in their closets, that I failed in enterprize; but let it be recollected the disease was perfectly new to me; that the poor woman was absolutely in articulo mortis; that the pain of the attempt was extreme; and at the moment I believed that even the reduction if it were a prolapsed fundus, would be unavailing, will prove an apology for not persisting, and prevent the charge of suffering a patient to expire before my eyes when there was a chance of relief. The death of this poor creature was more owing to the immense loss of blood than to the prolapsus; and the hæmorrhagy must be consi-

dered as proceeding from the uncontracted state of the uterus. It may be asked how this could happen; the uterus be in a state of relaxation sufficient to give rise to a fatal hæmorrhagy, yet offer so much resistance to the reduction of its fundus? The answer is at hand; it is a well-known fact that the different parts of the uterus may be at one and the same time in opposite conditions—that is, one portion may be in a state of contraction while another may be in a state of relaxation. (See Baudelocque, Vol. I, p. 146.) Thus then I conceive this case to have been; the fundus of the uterus is never, I believe, sufficiently ample to receive the whole of the placenta, consequently portions of this mass will be attached to its body; this part, from some cause not sufficiently obvious to mention, is at the moment of delivery in a state atony (or as Baudelocque emphatically calls it, syncope); the weight of the placenta dragged the fundus through the flaccid walls of the body, while the fundus retained its power of contraction; this contraction would separate a portion of the edge of the placenta from the body, and thus expose vessels that were before shut by its attachment; some of these vessels are large, and will in the

course of a short time pour out an immense and deadly quantity of blood. The uterus will recover its contractile power, sometimes even in the moment of death; this I believe to have happened in this case, as the fundus itself was very firm, and the body as I have already noticed gave a resistance not to be overcome by the force I used.

I did not employ much power, but more than sufficient I am certain (now from experience) to have carried the fundus through the body, had it been still flaccid. In case III, I succeeded in the reduction of the fundus, with a force not greater than that employed in case I.

The uterus may not only gain or retain its power of contraction in the moment of death,\* but may also lose it again; this took place in this case, for at the time of opening the body it was in every part perfectly flaccid. Does this not prove that its action does not depend on elasticity, as has been asserted by some? Does it not prove its muscularity?

\* See Harvey, Baudelocque, &c.

## CASE II.

On Friday, 24th March, 1808, at half past five o'clock in the morning, Mrs. P— was delivered of a living child; her waters discharged themselves six or seven hours previously, and before her midwife was called. The placenta came away spontaneously, as the midwife asserted, and to which the patient herself agreed; its expulsion was attended with great pain, and great flooding; she vomited severely for an hour, and several times fainted without an abatement of the discharge—this however was eventually moderated by the acetate of lead, and perhaps contraction of the uterus itself.

After this she continued pretty tranquil, but weak until Sunday morning, when there was a renewal of the hæmorrhagy, with pains resembling those of labour; these ceased in the afternoon, but she became more alarmingly ill; she now fainted frequently, and the discharge continued; in this way she kept until Tuesday, when I was called, at the desire of Dr. Atlee, whose patient she now was. The doctor sus-

pected the true state of this woman's case, and mentioned his opinion to me, to which I could not at first consent, as all the cases I had ever heard or read of, as well as I recollected, had proved fatal almost instantly; and the case I had witnessed a few months before but served to make me doubt the doctor's representation, or rather opinion. Here, if his judgment was correct, was an instance of inverted uterus, of four days' standing—a case giving contradiction to all I had ever heard or believed on the subject.

I however visited the patient by appointment, I found her almost exhausted: her pulse so frequent as not to be numbered, and so small as scarcely to be perceived; great difficulty of breathing, and became faint on the least motion; insatiable thirst, frequent vomiting, cold extremities, and a continuance of uterine discharge. I examined her and found, as Dr. Atlee had declared, the uterus to be inverted.—The fundus was down at the os externum, and could readily be seen partially covered with a thin coagulum of blood, when the labia were separated. The places not hid by this pellicle

were rough or spongy, and of a dark brown colour.

A very dreary prospect was presented by ascertaining this poor woman's situation; we believed death to be inevitable. But one resource offered itself—namely, to attempt the reduction of the fundus, hoping, as the uterus had not escaped from the vagina the inversion might not be so complete as to render this impossible. We accordingly proposed this attempt to the husband and friends of our patient, candidly stating her situation, and the almost certain result if relief was not obtained in this way. They without hesitation submitted the case to our management.

We carefully drew her to the side of the bed, and had her knees drawn up and supported. I gently introduced my hand under the tumour, and gradually raised it; this gave me sufficient room to examine the nature and extent of the inversion. The instant I raised the womb there was a large and sudden discharge of urine; this gave still more freedom to an examination that was to terminate in the disappointment of my hope of

the reduction of the fundus. I found so much of it had passed through the mouth of the uterus as to render any attempt at its reduction futile, and the more especially as its size was now augmented by its having swelled since its prolapsus. The stricture occasioned by the contracted mouth was readily felt, and was very strict.

I was extremely perplexed for a moment how to proceed, or to announce the failure of an attempt that alone at first sight appeared to promise success, or even relief, but it fortunately occurred to me before I withdrew my hand that I might take off the stricture, by inverting the uterus completely. Agreeably to this suggestion I grasped the tumour firmly, and drew it pretty forcibly towards me, and thus happily succeeded in slipping the remaining portion through the constricting mouth. The woman was instantly almost relieved from much of the anxiety and faintness she had before experienced, but as she was so exhausted by previous suffering and discharges, and as the internal surface of the uterus was now exposed to the influence of the external air, I was prevented from feeling or giv-

ing the slightest encouragement of recovery to her friends, but fortunately the event proved how needless were my fears, for from this day she rapidly recovered, without another alarming or troublesome symptom.

Milk was freely secreted on the fourth day after, and continued freely. Our patient was 23 years of age, delicate, but always healthy, but more especially during her pregnancy.

I visited this patient to day, Nov. 26, 1808, and found her at the wash tub perfectly well—suffers no inconvenience whatever from the uterus—menstruated regularly for three periods—had more or less discharge of mucous tinged with blood for four months—these last four months has had no discharge of any kind—suckles her child which is remarkably thriving—the uterus so much contracted as to be no longer within reach of her finger.

## REMARKS.

In this case we see with what wonderful facility parts accommodate themselves to new situa-

tions; the mouth of the uterus is now within the abdomen, while the internal surface of this viscus is subjected to the action of the external air, but whose influence it appeared to resist for some time as it persisted for three months in the regular secretion of the menstrual blood. Nay, we do not know whether this is stopped even now by any change effected on now its external surface, it may be the natural interruption from suckling. May this woman again conceive? I do not believe it impossible—it is a case well worth watching, for should this woman again prove pregnant it will effectually settle a long disputed point of physiology—it will incontrovertably prove that the semen is not conveyed through the os tincæ to the cavity of the uterus, from thence to the fallopian tubes and from thence to the ovaria to produce conception.

### CASE III.

On 23d Nov. 1808, Mrs. G—— was suddenly delivered of a large female child, which breathed and cried freely immediately after its birth—the funis was not cut until the pulsation in the cord had entirely ceased, which was in about

ten minutes. After the child was taken away I took hold of the cord and merely tightened it, on which she begged me to wait as it gave great pain; I however traced the cord to the vagina and found at the os externum a placenta, I thought unusually dense and large. Upon gently attempting to withdraw it I thought it loose in the vagina; and found uncommon resistance, which I attributed to its bulk and desisted from farther effort hoping the uterus would by contracting push it completely down, in this I was disappointed—some hæmorrhage ensued; I now suspected a more than common cause occasioned the detention of the placenta in the vagina and began a more minute examination. I pierced the substance of the placenta with the fore finger of my left hand, and tightened the cord with my right; beneath the placenta I perceived a round hard substance which I but too quickly feared to be the fundus of the uterus inverted. I immediately introduced my hand into the vagina and found the detached edge of the placenta from which the discharge proceeded—I carefully separated the whole of this mass and withdrew it from the pelvis without the least difficulty—a considerable flooding en-

sued, and I had an opportunity of having my fears realised.

As Mrs. N——'s case (case I,) gave me a complete insight of the mechanism of this displacement of the fundus of the uterus, and as I had resolved to attempt its reduction if ever an opportunity again offered, I instantly after withdrawing the placenta introduced my hand, and pressed the prolapsed fundus firmly with the back of my fingers and carried it upwards in the direction of the axis of the uterus, and in less than half a minute succeeded completely in restoring it. Mrs. G—— has not had since a single unpleasant symptom.

### REMARKS.

The success attending this case warrants, I conceive, the hope that this formidable disease may always be relieved if means be promptly used—it points out the necessity of a careful search in the vagina, where unusual difficulty attends the expulsion of the placenta—where there is hæmorrhagy and the placenta found at or near the os externum—but above all, when great pain is felt, when any force is exerted on the umbilical cord.

## CASE IV.

Mrs. G—— was delivered on the 25th Dec. 1808, at 6 o'clock P. M. after a labour of some hours, of her first child. The placenta was extracted in about 15 minutes without force; there was some hæmorrhage, and considerable pain. She was put to bed and became very faint and complained of great pain, which was occasionally augmented. She continued in this way but gradually becoming worse until 9 o'clock, at which time I was sent for.

I found her with a small frequent pulse, great anxiety, extremely pale and cadaverous, and in a profuse cold sweat. I inquired respecting the flooding, but this did not appear to be sufficient to account for her present situation. I immediately suspected a partial inversion of the uterus, and thought proper to apprise her friends of the probable cause of her distress and danger, and also of the possible result of it. Every thing was left to my own management. Upon applying my hand to the abdomen I found the uterus sunk pretty low in the pelvis, and indented at its top. I immediately after examined per vaginam, and found my conjecture but too true.

The uterus was found inverted and its fundus was just within the os externum. I was much alarmed for my patient, as three hours or rather more had elapsed between the time of her delivery and my being called; she was much exhausted and in extreme agony. I quickly introduced my left hand into the vagina and applied the backs of my fingers firmly against the tumour while I moderated its influence in carrying the uterus directly up through the pelvis by having a gentle pressure made upon the abdomen above it. The tumour soon began to yield, and in about two minutes the fundus was completely restored.

On the third day after, my patient complained of a severe pain in the right side just above the ilium, for which I bled her freely and purged her briskly—nothing unpleasant supervened after this—she might be said to have had a good getting up.

#### REMARKS.

Three hours <sup>were</sup> ~~was~~ lost in this case from a belief that all the pain and anxiety was owing to after pains as they are termed; but when 120 drops of laudanum did not relieve her, the mid-

wife became alarmed, and I was sent for.—This patient would have been spared much distress had her disease been instantly known; and the risk of death prevented had the uterus been quickly replaced. I say risk of death, for this there certainly was, as her symptoms were as alarming as possible; nor was there any ground from experience, to hope for a reduction of the fundus as so much time had been lost. This case I deem highly important as it teaches us not to abandon our patient under these circumstances; and to attempt a reduction at whatever time we may be called.—We certainly cannot limit the time at which this attempt will be unsuccessful—this may in some instances happen before the period of three hours or perhaps one; and it may be possible at even a later period. May not the disposition to syncope in this case have retarded the contraction of the body and neck?

It was insisted on in this case that no unusual force was used to deliver the placenta; it separated from the uterus spontaneously, and was expelled without introducing a finger into the vagina.





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